

ABSTRACT

A radiation detector made from a compound, or alloy, comprising $\text{Cd}_x\text{Zn}_{1-x}\text{Te}$ ($0 \leq x \leq 1$), Pb in a concentration between 10 and 10,000 atomic parts per billion and at least one element selected from the group consisting of (i) Cl and (ii) elements in column III of the periodic table in a concentration between 10 and 10,000 atomic parts per billion. The radiation detector exhibits full electrical compensation, high-resistivity, full depletion under an applied electrical bias and excellent charge transport.